

Amendment to the Claims:

The claims under examination in this application, including their current status and changes made in this paper, are respectfully presented.

1 (currently amended). A MAP decoding method, comprising the steps of:

- performing a first sliding window operation in a first direction on at least a partial block of data, to ~~thereby~~ obtain first derived parameters;
- performing a second sliding window operation in a second direction, ~~which that~~ is opposite to said first direction, on at least a partial block of said data, to ~~thereby~~ obtain second derived parameters; and
- processing said first and second derived parameters, to ~~thereby~~ generate data estimate values;

wherein each of said sliding window operations comprises a sequence of operations to be performed on each partial block of data;

and wherein each of said sliding window operations is are pipelined with each other, to so that a plurality of the operations in the sequence operate in parallel on different respective portions partial blocks of data.

2 (canceled).

3 (currently amended). A method for bi-directionally processing a block of data in a sequence of blocks of data, which does not necessarily have a known state at endpoints thereof, according to at least one sequencing constraint, comprising the steps of:

- sequentially processing data elements of the block in a first direction, after first processing, in said first direction, prolog elements from an adjacent block in said first direction in accordance with said sequencing constraint; and
- sequentially processing said data elements in a second direction, after first processing, in said second direction, prolog elements from an adjacent block in said second direction in accordance with said sequencing constraint.

4 (original). The method of Claim 3, wherein the processing of data elements in the first direction, and the processing of data elements in the second direction are done in parallel.

5 (currently amended). The method of Claim 3, wherein each step of processing data elements ~~is divided into separate stages, and the separate stages operate in parallel~~ comprises a sequence of operations to be performed on each partial block of data;

and wherein each of step of processing data elements is pipelined so that a plurality of the operations in the sequence operate in parallel on different data elements.

6 (currently amended). A method for parallel MAP processing of a lattice-coded block of data, comprising the steps of:

dividing the data into sliding window blocks, and, for each of multiple ones of said sliding window blocks,

a) sequentially processing the elements of the respective sliding window block in a first direction, after first processing, ~~prolog elements~~ in said first direction, prolog elements from an adjacent sliding window block in accordance with a sequencing constraint; and

b) sequentially processing the elements of the respective sliding window block in a second direction, after first processing, ~~prolog elements~~ in said second direction, prolog elements from an adjacent sliding window block in accordance with said sequencing constraint;

wherein said steps a) and b) are performed at least partly in parallel with each other.

7 (currently amended). The method of Claim 6, wherein at least one of steps a) and/or b) are divided into separate stages, and the separate stages comprises a sequence of operations to be performed on each sliding window block;

and wherein the at least one of steps a) and b) is pipelined so that a plurality of the operations in the sequence operate in parallel on different sliding window blocks.

8 (currently amended). A method for parallel MAP processing on a plurality of sliding window blocks of data, comprising the steps of:

a) combining probability metrics on a first sliding window block of data in at least one adder tree; and

b) performing ~~an~~ a maximum-finding operation on a first previous sliding window block of data to combine ones of said metrics ~~which~~ that correspond to alternative possibilities;

wherein said steps a) and b) are at least partly performed in a parallelized pipeline relationship with each other.

9 (original). The method of Claim 8, wherein the maximum-finding operation is an exponent-logarithm equation.

10 (original). The method of Claim 8, wherein the maximum-finding operation is an estimation of an exponent-logarithm function.

11 (currently amended). ~~The A~~ method of ~~parallel MAP processing of claim 8~~, further comprising the steps of:

~~a) combining probability metrics in at least one adder tree;~~

~~b) performing a maximum-finding operation to combine ones of said metrics which that correspond to alternative possibilities;~~

c) performing a normalization operation on the results of said step b) on a second previous sliding window block of data;

wherein said steps a), b), and c) are at least partly performed in a parallelized pipeline relationship with each other.

12 (original). The method of Claim 11, wherein the maximum-finding operation is an exponent-logarithm equation.

13 (original). The method of Claim 11, wherein the maximum-finding operation is an estimation of an exponent-logarithm equation.

14 (currently amended). A system for MAP processing of a data stream, the data stream being divided into sliding window blocks, comprising:

an alpha generation process;

a beta generation process;

wherein each of the alpha generation process and the beta generation process are is divided into multiple pipelining stages to operate on multiple sliding window blocks using alpha and beta prologs, respectively.